Miscellaneous Template Features Solutions

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static_assert()

- Describe static_assert()
  - static_assert() is a compile-time version of assert()
  - It takes a bool and a string literal
  - If the bool argument evaluates to false, the compilation stops and the string literal will be used in the compiler's error message
  - Otherwise, the compilation continues normally
- Write some code to demonstrate the use of static_assert()

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Template bloat

- What is meant by "template bloat"?
  - If a template in instantiated with the same type parameters in many source files, the compiler will have to generate the same code for it in each file
  - This increases compilation time and results in larger object files
- What Modern C++ feature helps avoid template bloat?
  - With "extern" templates, the template is only instantiated once
  - Instead of generating other instantiations with the same type parameters, the compiler provides a "reference" to this single instantiation

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extern keyword

- Write a simple program that demonstrates the use of the "extern" keyword with a variable

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extern template

- Write a simple program that uses an extern template

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